

WHAT IS CLAIMED IS:

1. A method comprising:
establishing a channel or connection from a first physical port, the first physical port being mapped to a first virtual port;
identifying a second physical port; and
remapping the virtual port to the second physical port to move the connection to the second physical port.
2. The method of claim 1 wherein establishing comprises establishing a channel or connection from a physical first port over a first fabric, the first physical port being mapped to a first virtual port.
3. The method of claim 2 wherein identifying comprises identifying a second fabric and a second physical port connected thereto.
4. The method of claim 3 wherein the remapping comprises remapping the virtual port to the second physical port to failover onto the second fabric.
5. The method of claim 4 wherein the remapping comprises remapping the virtual port to the second physical port to failover onto the second fabric without re-establishing the channel or connection.

6. A method comprising:

establishing a channel between a local node and a remote node through a first physical port at the local node and through a first fabric, the channel being assigned to a local virtual port;

providing a virtual to physical port map;

detecting a fabric or port failure;

identifying a new fabric and a new local physical port that is connected to the new fabric; and

reprogramming the virtual to physical port map to reassign the virtual port to the new local physical port.

7. The method of claim 6 wherein the local node maintains a local per channel context including an address of the remote node and the local virtual port.

8. The method of claim 7 wherein the local per channel context further includes a queue pair number of the remote node.

9. The method of claim 6 and further comprising:

determining if the fabric failure occurred within a predetermined time period of a last fabric failure; and

reprogramming the virtual to physical port map only if the fabric failure did not occur within the predetermined time period of a last fabric failure.

10. The method of claim 6 wherein the same address is assigned to both the first physical port and the new physical port.

11. A method comprising:

establishing a plurality of channels or connections from a first group of physical ports over a first fabric, the first group of physical ports being mapped to a group of virtual ports;

detecting a failure of the first fabric;

identifying a second fabric and a second group of physical ports connected thereto; and

remapping the group of virtual ports to the second group of physical ports to failover onto the second fabric.

12. The method of claim 11 wherein the remapping comprises remapping the group of virtual ports to the second group of physical ports to route the plurality of channels through the second fabric rather than the first fabric.

13. An apparatus comprising a storage readable media having instructions stored thereon, the instructions resulting in the following when executed by a machine:

establishing a channel or connection from a first physical port over a first fabric, the first physical port being mapped to a first virtual port;

detecting a failure;

identifying a second fabric and a second physical port connected thereto;
and
remapping the virtual port to the second physical port.

14. The apparatus of claim 13, wherein the establishing comprises establishing a channel or connection from a physical first port over a first fabric, the first physical port being mapped to a first virtual port, and wherein the identifying comprises identifying a second fabric and a second physical port connected thereto.

15. An apparatus comprising:
a virtual to physical port map;
a node comprising a plurality of physical ports and coupled to a plurality of fabrics, the node to establish a channel or connection over a first physical port and a first fabric, the first physical port being mapped to a virtual port, the node to identify a second fabric and a second physical port connected thereto in response to a fabric failure, the node comprising:

a port mapper coupled to the virtual to physical port map to map the virtual port to the second physical port to failover onto the second fabric.

16. The apparatus of claim 15 and wherein the node further comprises a cell scheduler coupled to the first and second physical ports.

17. The apparatus of claim 15 wherein the node further comprises a cell construction engine.

18. The apparatus of claim 15 wherein the port mapper comprises a port mapper to map the virtual port to the second physical port to route the channel through the second fabric rather than the first fabric.

19. A node comprising:

a plurality of physical ports;

a network interface to establish a connection to a second node via a first physical port;

a virtual-to-physical port map to maintain a map or correspondence between the first physical port to a first virtual port, the context of the connection defined in part by the first virtual port; and

a port mapper coupled to the virtual-to-physical port map to re-map the first virtual port to a second physical port if a failure is detected.

20. The node of claim 19 wherein the first physical port is coupled to the second node via a first fabric while the second physical port is coupled to the second node via a second fabric, and the port mapper to re-map the first virtual port from the first physical port to the second virtual port if a failure in the first physical port or first fabric is detected.

21. The node of claim 19 wherein the network interface comprises a channel adapter.

22. The node of claim 21 wherein the channel adapter comprises a host channel adapter.

23. The node of claim 19 wherein the node further comprises one or more work queues.

24. The node of claim 23 wherein the one or more work queues comprise a send queue and a receive queue.

25. The node of claim 24 wherein the node comprises a send queue and receive queue for each channel or connection.

26. The node of claim 19 wherein the node comprises a central processing unit, memory and a memory controller.

27. The node of claim 19 wherein the port mapper comprises a port mapper to
→ re-map the first virtual port from the first physical port to the second virtual port if
a failure in the first physical port or first fabric is detected, the context of the channel, including the first virtual port, remaining the same despite the re-mapping from the first physical port to the second physical port.

28. A first node comprising:

a plurality of physical ports and a plurality of virtual ports;

a network interface having a first physical port coupled to a first fabric and

a second physical port coupled to a second physical port;

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a virtual-to-physical port map to maintain a map or correspondence

between physical ports and virtual ports;

a port mapper to update the virtual to physical port map to map a new
physical port to a virtual port;

→ the network interface to establish a connection over the first fabric and first
physical port to a second node, the first virtual port being mapped to the first
physical port in the port map, the connection being defined at least in part by the
first virtual port; and

the port mapper to update the virtual to physical port map to map the first

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→ virtual port to the second virtual port to provide the connection over the second
port and second fabric in the event of a failure or problem with either the first
physical port or the first fabric.

29. The node of claim 28 wherein the network interface comprises a
channel adapter.

30. The node of claim 28 and further comprising one or more work
queues.

31. A system comprising:

a first node comprising:

a plurality of physical ports and a plurality of virtual ports;

a network interface having a first physical port coupled to a first fabric and a second physical port coupled to a second physical port;

a virtual-to-physical port map to maintain a map or correspondence between physical ports and virtual ports;

a port mapper to update the virtual to physical port map to map a new physical port to a virtual port in the event of a failure;

a first fabric coupled to the first physical port of the first node;

a second node coupled to the second physical port of the second node;

the network interface to establish a connection with a second node over the first fabric and first physical port, the first virtual port being mapped to the first physical port in the port map, the connection being defined at least in part by the first virtual port; and

the port mapper updating the virtual to physical port map to map the first virtual port to the second virtual port in the event that a failure in either the first physical port or the first fabric is detected.

32. The system of claim 31 wherein the port mapper comprises a port mapper to update the virtual to physical port map to map the first virtual port to the second virtual port to provide the connection over the second port and

second fabric in the event of a failure or problem with either the first physical port or the first fabric.

33. The system of claim 31 wherein the network interface comprises a channel adapter.

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